

REMARKS/ARGUMENTS

The Office Action rejected claims pending claims 17-22 under 35 USC §102(b) as being unpatentable over Dhome (Hierarchical Approach For Polyhedra Recognition by Hypothesis Accumulation.). The rejection of the claims is respectfully traversed. The present amendment, amends claims 21 and 22 to improve the format and provide clarity in the claim language.

The Dhome Reference

The Dhome reference teaches a hierarchical method for recognizing shapes in range data. Dhome, Abstract, p. 88. Much of the discussion in Dhome focuses on two problems in robot vision systems (1) recognizing 3-D objects and (2) determining the position of objects in space.

Based on a review of the Dhome reference it appears that Dhome does not contain any significant discussion describing how the planar surfaces are derived. Indeed, the Dhome reference describes in great detail aspects of the recognizing polyhedral objects from planar surfaces which are derived from range data, but provides little if any discussion regarding the process used to derive the actual planar surfaces.

In rejecting the various pending claims, the Office Action specifically cites various passages from the Dhome reference. One particular area of Dhome, which is referred to repeatedly in the Office Action in connection with rejecting the independent claims, is the discussion on page 90, col. 2 of Dhome. The discussion in Dhome at page 90 describes the capability of the Dhome method for recognizing polyhedra objects. The Dhome reference refers to the operation of a camera, in connection with obtaining the range data, and notes that some points in a scene may not be visible to the camera, and goes on to state that: "to fill up these blind areas, the range finder generates false planar surfaces." Dhome, page 90, lines 19-21. Dhome appears to provide no discussion regarding how the generation of the false planar surface is achieved, and certainly there appears to be no suggestion implementing a method as described in the pending application. More specifically, based on a review of the entire Dhome reference it is very clear that Dhome does not describe any operation like the operations recited in each of the independent claims which are specifically identified in the discussion below.

The Pending Claims:

In summary, Claim 17 recites a method which includes deriving a first geometric primitive from a first group data points, and deriving a second geometric primitive from a second group of data points. A new group of data points is then created by combining the first and second groups of data points, and this new group of data points is then used to derive a new geometric primitive. Further, the claim 17 recites that the each of the primitives are of the same type. It is respectfully submitted that based on a careful review of the Dhome reference, it appears that Dhome does not disclose, or suggest, any operation similar to that recited by claim 17. The combining of the data points for two geometric primitives, and then using the combined data points to derive a new geometric primitive, is clearly a very different operation, to any of operations described in Dhome. Indeed, as discussed above, Dhome is focused on the very different issue of recognizing and locating polyhedra objects, as opposed to dealing with the challenges of using actual data to generate the underlying primitive objects themselves. Thus, it is respectfully submitted that claim 17, and its dependent claims are patentable over the references.

In summary claim 21 recites a method for merging two geometric primitives of the same type to form a single geometric primitive also of the same type. The method includes combining the points used to originally fit each of the two initial geometric primitives, and then using a fitting technique to fit the new geometric primitive with the combined group of points. Further, claim 21 provides that the two initial primitives represent different portions of the same object. It is respectfully submitted that as discussed in more detail above, the teaching of Dhome, does not disclose anything like the method recited by claim 21. Thus, it is respectfully submitted that claim 21 is patentable over the references.

In summary claim 22 recites a method for merging two geometric primitives of the same type to form a single geometric primitive also of the same type. The method provides that a first primitive of the two primitives is referenced to a first set of points which are part of the group of points, and wherein a second primitive of the two primitives is referenced to a second set of points which are part of the group of points, and in response to a merging request the fitting of the new geometric object is performed using the first set of points and the second set of points. It is respectfully submitted that this method of merging of two geometric primitives to form a single geometric primitive of the same type is entirely different than any of the teach of the

Dhome reference, as is discussed in more detail above. Thus, it is respectfully submitted that claim 22 is patentable over the references.

Information Disclosure Statement:

Enclosed herewith is a copy of an Information Disclosure Statement which was mailed to the USPTO on September 15, 2003. This IDS was submitted with the original filing of the present application. It is believed that the Examiner has reviewed the references, and it is respectfully requested that the Examiner initial the references on the PTO-1449 form as having been reviewed.

CONCLUSION

For the reasons set forth above, it is believed that all claims present in this application are patentably distinguished over the cited references. Therefore, reconsideration is requested, and it is requested that this application be passed to allowance.

Respectfully submitted,

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